

# Emily Starrett

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(602) 359-0431

## **EDUCATION**

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PhD in Learning Literacies and Technologies (STEM Education focus)	Expected May 2024
Arizona State University, Tempe, AZ	
* <i>Dissertation</i> : Math and science teacher perceptions and practice: Using student uncertainty as a pedagogical tool (Defense date: April 3 <sup>rd</sup> , 2024)	
* <i>Dissertation Committee</i> : Carla Firetto (chair), Michelle Jordan, Ronald Beghetto	
MEd in Learning Design and Technologies	May 2020
Arizona State University, Tempe, AZ	
BA in Special Education and Elementary Education	May 2010
Northern Arizona University, Flagstaff, AZ	

## **RESEARCH EXPERIENCE**

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Research Assistant; Teachers College, Arizona State University 2020 – Present

- Dr. Carla Firetto: Focused on productive discourse and Quality Talk; contributed to research evaluating effective study strategies and STEM discussions with teachers and students; collaborated in writing NSF grant applications
- Dr. Michelle Jordan: Focused on teacher uncertainty; contributed to an NSF grant along with Dr. Ying-Chih Chen on epistemic uncertainty in STEM classrooms
- Research interests: Teacher uncertainty; Teacher preparedness; Evaluate and improve teacher professional development, Mathematical uncertainty; Incorporate collaborative discourse into STEM classrooms
  - Contributed to Mixed Methods and Design-Based Research studies
  - Transdisciplinary collaboration with faculty and fellow doctoral students across departments, as well as members of the community
  - Created observation and interview protocols, conducted observations and interviews, and created surveys for research; experience writing grants and manuscripts
  - Designed and lead teacher professional development programs
  - Experience designing and implementing syllabi for teacher preparation courses
  - Experience exploring teacher perceptions and how they impact change in pedagogical practice

## **PROFESSIONAL DEVELOPMENT DESIGN EXPERIENCE**

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Arizona State University; PhD 2020 – Present

- Collaboratively designed and facilitated practice-based professional development programs for math and science teachers centered around:
  - Problem-based learning
  - Using student uncertainty as a pedagogical resource
- Independently designed and facilitated interactive professional development workshops for math teachers centered around:
  - Embedding mathematical uncertainty into problematized instruction
  - Redesigning instruction to include inclusive and equitable practices
- Collaboratively designed an online instructional module to support undergraduate students form and engage in productive study groups.
  - Module utilized in research as an intervention

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Arizona State University; MEd

2019 – 2020

- Developed an online instructional module focused on supporting teachers in the Bellevue School District (WA) learn how analyze student academic data in the new district data analytic program, Data Insights.
  - Completed a needs assessment for the district, created a functional prototype to pilot test, conducted focus groups, revised to create the final instructional course
  - Served as the Instructional Designer and Project Manager
  - Worked in collaboration with the subject matter expert and technology training specialist

## **PUBLICATIONS**

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*Peer Reviewed Journal Articles (published or under review)*

1. Starrett, E., & Firetto, C. M. (submitted 12/6/23). Purposefully embedding uncertainty into teacher preparation: A qualitative exploration of pre-service teachers' personal, pedagogical, and mathematical uncertainty. *Learning and Instruction, Special Issue: Empowering Pre-Service and In-Service Teachers as Instructional Designers*.
2. Chen, Y.-C., Jordan, M. E., Park, J., Starrett, E. (in press). Navigating student uncertainty for productive struggle: Establishing the need for and distinguishing types, sources, and desirability of scientific uncertainties. *Science Education*.
3. Starrett, E., Jordan, M., Chen, Y.-C., Park, J. & Meza-Torres, C. (2024). Desirable uncertainty in science teaching: Exploring teachers' perceptions and practice of using student scientific uncertainty as a pedagogical resource. *Teaching and Teacher Education, 140*, 104456. <https://doi.org/10.1016/j.tate.2023.104456>
4. Firetto, C. M., Starrett, E., & Jordan, M. E. (2023). Using small-group discussion to foster in-service teachers' comprehension and instruction of sustainable energy transitions through PV science. *Journal of Science Teacher Education, 1*-33. <https://doi.org/10.1080/1046560X.2023.2246777>
5. Firetto, C. M., Starrett, E., Collins Montalbano, A., Yan, L., Penkrot, T. A., Kingsbury, J. S., & Hyatt, J.-P. K. (2023). The impact of effective study strategy use in an introductory anatomy and physiology class. *Frontiers in Education, 8*, 1161772. <https://doi.org/10.3389/feduc.2023.1161772>
6. Yan, L., Firetto C. M., Starrett, E., Kingbury, J. S., Penkrot, T. A., & Hyatt, J.-P. K. (2023). Exploring supports or incentives to promote undergraduate students' use of cooperative study groups. *International Journal of Educational Research Open, 4*. <https://doi.org/10.1016/j.ijedro.2023.100252>
7. Firetto, C. M., Starrett, E., & Jordan, M. E. (2023). Embracing a culture of talk: STEM teachers' discussion engagement and enactment. *International Journal of STEM Education, 10*(1), 1-21. <https://doi.org/10.1186/s40594-023-00442-7>
8. Starrett, E., Firetto, C. M. & Jordan, M. E. (2022). Navigating sources of teacher uncertainty: Exploring teachers' collaborative discourse when learning a new instructional approach. *Classroom Discourse, 14*(1), 45-68. <https://www.tandfonline.com/doi/full/10.1080/19463014.2021.2013266>
9. Starrett, E. (2022). Role ambiguity among secondary teachers. In *Society for Information Technology & Teacher Education International Conference* (pp. 201-205). Association for the Advancement of Computing in Education (AACE).
10. Park, J., Starrett, E., Chen, Y.-C., Jordan, M. (2022). *Facilitating productive struggle in science education: The possible benefits of managing scientific uncertainty during sensemaking*. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*.

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11. Warr, M., & Starrett, E. (2021). Exploring technology adoption amidst uncertainty. In *Society for Information Technology & Teacher Education International Conference* (pp. 801-810). Association for the Advancement of Computing in Education (AACE).

## *Peer Reviewed Journal Articles (in preparation)*

12. Starrett, E., Jordan, M., Chen, Y.-C., Park, J., & Meza-Torres, C. (in preparation). Science teachers' perceptions and practice of student uncertainty in science instruction: The changes experienced after engaging in a practice-based professional development. *Science Education*.
13. Jordan, M. E., Starrett, E., Firetto, C. M., & Ricca, B. (in preparation). Meaning construction through small-group discussions: STEM teachers' trajectories of uncertainty navigation and multiple source use. *Cognition and Instruction*.
14. Starrett, E., & Beghetto, R. (in preparation). Designing problematized instruction: How can mathematical uncertainty be embedded into lesson design? *Mathematics Teacher Education and Development*.
15. Firetto, C. M., Yan, L., Starrett, E., Jaber, L., Kingsbury, J. (in preparation). Using study-group discussions to promote cross-system integration in an introductory anatomy and physiology course. *Journal TBD*.
16. Starrett, E., & Pivovarova, M. (in preparation). Role ambiguity and technology adoption. *Journal TBD*.
17. Starrett, E. (in preparation). Mathematical uncertainty: A design-based-research study in a secondary mathematics classroom. *Journal TBD*.

## **CONFERENCE PRESENTATIONS**

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### *National Conferences*

1. Starrett, E. (2024, February). *Embedding mathematical uncertainty into problematized instruction*. Interactive workshop presented at the National Council of Teachers of Mathematics (NCTM) Regional Conference and Exposition, Seattle, WA.
2. Starrett, E. (2024, February). *Differentiating between desirable and undesirable uncertainties*. Interactive workshop presented at the National Council of Teachers of Mathematics (NCTM) Regional Conference and Exposition, Seattle, WA.
3. Starrett, E., & Firetto, C. M. (2024, April). *Purposefully embedding uncertainty into a mathematics teacher preparation course*. Presented at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA.
4. Starrett, E., Park, J., Meza-Torres, C., Jordan, M. E., & Chen, Y.-C. (2024, April). *Science teachers' perceptions and practice of uncertainty: The changes experienced after engaging in professional development*. Presented at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA.
5. Park, J., Starrett, E., Meza-Torres, C., Chen, Y.-C., & Jordan, M. E. (2024, April). *Understanding multiple dimensions of how students manage uncertainty for productive struggle*. Presented at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA.
6. Firetto, C.M., Yan, L., Starrett, E., Jaber, L., Kingsbury, J. S., Penkrot, T. A., & Hyatt, J.-P. K. (2024, April). *Examining undergraduate anatomy and physiology students' connection generation in collaborative online study groups*. Presented at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA.
7. Starrett, E., & Firetto, C. M. (2023, October). *The role of uncertainty in mathematics teacher education*. Presented at the Scholarly Consortium of Innovative Psychology in Education (SCIPIE), Portland, OR.
8. Jordan, M. E., Firetto, C. M., Starrett, E., & Meza-Torres, C. (2023, October). *Navigating the study of teacher and student uncertainty in STEM learning*. Presented at the Scholarly Consortium of Innovative Psychology in Education (SCIPIE), Portland, OR.
  - Nominated for an "Innovation in Research" award

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- Starrett, E., Park, J., Chen, Y.-C., & Jordan, M. (2023, April). *Exploring science teachers' perceptions and management of students' desirable uncertainty*. Presented at the annual meeting of the American Educational Research Association (AERA), Chicago, IL.
- Park, J., Starrett, E., Chen, Y.-C., & Jordan, M. (2023, April). *Theoretical framework for understanding student experiences of productive struggle: Types, sources, and desirability of uncertainties*. Presented at the annual meeting of the American Educational Research Association (AERA), Chicago, IL.
- Firetto, C. M., Starrett, E., Yan, L., Hyatt, J.-P., & Penkrot, T. (2023, April). *Promoting collaborative study strategy use with biology undergraduate students*. Presented at the annual meeting of the American Educational Research Association (AERA), Chicago, IL.
- Park, J., Starrett, E., Chen, Y.-C., Jordan, M. (2022, July). *Facilitating productive struggle in science education: The possible benefits of managing scientific uncertainty during sensemaking*. 16th International Conference of the Learning Sciences (ICLS), Virtual.
- Firetto, C. M., Montalbano, A. C.<sup>+</sup>, Starrett, E., Yan, L., Hyatt, J.-P., & Penkrot, T. (2022, August). *A study strategy module for biology undergraduates: Uptake and impact*. American Psychological Association (APA) Annual Convention, Virtual.
- Starrett, E. (2022, April). *Role Ambiguity Among Secondary Teachers*. Society for Information Technology and Teacher Education, Virtual.
- Firetto, C. M., Starrett, E., Jaber, L., & Kingsbury, J. (2021, October). *Using Study-Group Discussions to Promote Cross-System Integration in an Introductory Anatomy and Physiology Course*. SCPIE, Virtual.
- Firetto, C. M., Starrett, E., Jordan, M. E. (2021, April). *Embedding Authentic Discussions in Professional Development to Promote Science Teachers' Discussion Competency and Enactment*. Presented at the annual meeting of the American Educational Research Association, Virtual.
- Warr, M. & Starrett, E. (2021, March). *Exploring technology adoption amidst uncertainty*. Presented at the annual conference of the Society for Information Technology and Teacher Education, Virtual.

### State and Local Presentations

- Starrett, E. (2021, November). *Role ambiguity in math* – ISSR poster competition and presentation at Arizona State University, Virtual.
- Starrett, E. (2021, February). *How can I help you? A collaborative action research proposal*. Presented at the annual conference of the Teachers College Doctoral Council at Arizona State University, Virtual.

## **TEACHING AND MENTORING EXPERIENCE**

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### *Certified in Secondary Mathematics (WA)*

MTE 311 – Algebra, Geometry, and Statistics for K-8 Teaching	Spring 2023
<ul style="list-style-type: none"><li>Arizona State University</li><li>Instructor of Record and designed the syllabus</li></ul>	
EDP 311 – Educational Psychology for Future Teachers	Fall 2021
<ul style="list-style-type: none"><li>Arizona State University</li><li>Mentorship TA</li></ul>	
Secondary Math Teacher	2017 – 2020
<ul style="list-style-type: none"><li>Bellevue School District, WA</li><li>Scottsdale Unified School District, AZ</li></ul>	

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Special Education Teacher	2010 – 2017
<ul style="list-style-type: none"><li>• Scottsdale Unified School District, AZ</li><li>• Washington Elementary School District, AZ</li></ul>	
Teacher mentor for prospective teachers	2014, 2015, 2019
<ul style="list-style-type: none"><li>• Scottsdale Unified School District, AZ</li></ul>	
Choreography/Dance	2010 – 2020
<ul style="list-style-type: none"><li>• Choreographed musical productions for Chaparral High School (Scottsdale, AZ) and Greasepaint Youth Theater (Scottsdale, AZ)<ul style="list-style-type: none"><li>○ Choreography has been nominated and won several awards</li></ul></li><li>• Taught at dance studios in CA and AZ; Directed and choreographed local AZ commercials</li></ul>	

## **PROFESSIONAL SERVICE**

LLT Program Committee Representative	2022 – Present
Graduate student mentor	2021 – Present
Manuscript and Proposal Review	
Mathematics Teacher Education and Development	2023
Contemporary Educational Psychology (ad hoc peer review)	2023
Contemporary Issues in Technology and Teacher Education_Math	2022
APA Division 15 Convention	2021, 2023

## **PROFESSIONAL AFFILIATIONS**

National Council of Teachers of Mathematics (NCTM)	2023 – Present
American Psychological Association (APA)	2023 – Present
American Educational Research Associate (AERA)	2020 – Present
Society of Information Technology and Teacher Education (SITE)	2020 – Present

## **CONTINUING EDUCATION (WORKSHOPS)**

Washington State PD workshops	2022 – Present
Culturally Responsive Teaching	
Social Emotional Learning	
Using mathematical routines to meet standards with neurodiverse students	
Sensory strategies for an inclusive classroom	
Media literacy across the curriculum	
ChatGPT: A tool for teachers	
Institute for Social Science Research (ISSR) online workshops	2020 – Present
Writing a Literature Review	
Cross-Cultural Research	
Career Planning	
Content Analysis	
Grounded Theory	
Qualitative Data Analysis	
Introduction to Statistics (Coursera)	August, 2022

Please visit <https://www.emilystarrett.com> for more information